

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Claim 1 (Currently Amended). A speaker apparatus comprising:

a primary coil disposed in the vicinity of a gap of a magnetic circuit and to which a current corresponding to an input audio signal is supplied;

a secondary coil, disposed in the gap, for inducing a current corresponding to a current that flows in said primary coil; and

a vibrating plate vibrated by said secondary coil with an interaction of the current induced by said secondary coil and a magnetic flux in the gap,

wherein the following formula is satisfied

$$N \times (R_1 \times R_2)^{1/2} / (2 \pi \times L_1 \times (1 - k^2)^{1/2}) \geq 20000 \text{ Hz}$$

where R_1 is the DC resistance of said primary coil; L_1 is the DC resistance of said primary coil; L_1 is the inductance of said primary coil; N is the number

of turns of said primary coil; R_2 is the DC resistance of said secondary coil; and k is the coupling coefficient of said primary coil and said secondary coil.

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Claim 2 (Currently Amended). The speaker apparatus as set forth in claim 1, ~~wherein the individual constants~~ R_1 , L_1 , N , R_2 , and k satisfy the following formula at a frequency f in a desired reproduction frequency band

$$2 \pi \times f \times L_{12} \times (N_2 \times R_2 + 1) / (N_2 \times X^{1/2}) \geq 0.3$$

$$X = (2 \pi \times f)^2 \times (L_1 \times R_2 + L_1 \times R_1 / N_2)^2 + \{-R_1 \times R_2 + (2 \pi \times f)^2 \times L_{12} \times (1 - k^2) / N_2\}^2$$

Claim 3 (Currently Amended). A The speaker apparatus as set forth in claim 1, ~~comprising:~~
~~a primary coil disposed in the vicinity of a gap of a magnetic circuit and to which a current corresponding to an input audio signal is supplied;~~

~~— a secondary coil, disposed in the gap, for inducing a current corresponding to a current that flows in said primary coil; and~~

~~— a vibrating plate vibrated by said secondary coil with an interaction of the current induced by said secondary coil and a magnetic flux in the gap,~~

wherein the following relation is satisfied

$$L1 / L2 = R1 / R2$$

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cont
where ~~R1 is the DC resistance of said primary coil; L1 is the inductance of said primary coil; R2 is the DC resistance of said secondary coil; and L2 is the inductance of said secondary coil.~~

Claim 4 (Currently Amended). The speaker apparatus as set forth in claim 3,

wherein when ~~the~~ said coupling coefficient, k, of said primary coil and said secondary coil is equal to 1, the square of the number of turns of said primary coil is equal to the ratio of the DC resistance R1 of said primary coil and the DC resistance R2 of said secondary coil.